REMARKS

Claims 36-43 and 45-54 are pending in the present application. In the Final Office Action, claims 36-37, 39-43, 45-46, and 48-52 were rejected under 35 U.S.C. §102(e) as being anticipated by Yang (U.S. Patent No. 6,040,603) in view of Hsing et al. (U.S. Patent No. 5,517,046). However, the Examiner cited 35 U.S.C. §103(a) just prior to the statement rejecting these claims. Moreover, the Examiner admits that Yang does not disclose all the limitations of the present invention, *i.e.* Yang does not disclose selecting a first distance to a boundary of a first doped well to provide a desired breakdown voltage between a first doped plug and a first doped region. Thus, Applicant assumes that the Examiner intended to reject these claims under 35 U.S.C. §103(a). Pursuant to this assumption, the Examiner's rejections are respectfully traversed.

Applicant describes and claims in independent claims 37, 46, and 51, among other things, selecting a first distance from a first doped plug to a first boundary of the first doped well to provide approximately a desired breakover voltage between the first doped plug and the first doped region. For example, a first n-plug 104 may be positioned a distance "x" from a first edge 122 of a first n-well 106. The breakover voltage is therefore tunable by adjusting the distance "x." See Patent Application, pg. 14, ll. 19-22 and Figure 5.

Yang is directed to controlling a breakover voltage in an electrostatic discharge protection device. Yang describes forming source and drain regions 305, 307, each having a lightly doped drain region, using ion implants. Next, a first electrostatic discharge implant 309 is formed such that the electrostatic discharge implant 309 will wholly encompass the source region 305, the drain region 307, and the lightly doped drain regions. A second electrostatic discharge implant 311, which has an impurity type opposite to that of the source and drain regions 305, 307 and the first electrostatic discharge implant 309, is formed underneath the first electrostatic discharge

implant 309. See Yang, col. 2, ll. 44-67 and Figure 3. As disclosed by Yang, the breakover voltage of the electrostatic discharge protection device is determined by a distance (designated "d" in Figure 3 of Yang) between the first electrostatic discharge implant 309 and the second electrostatic discharge implant 311. See Yang, col. 3, ll. 3-7, and Figure 3. However, as admitted by the Examiner at page 2 of the Final Office Action, Yang does not teach or suggest selecting a first distance from a first doped plug to a first boundary of the first doped well to provide approximately a desired breakover voltage between the first doped plug and the first doped region.

The Examiner alleges that Hsing teaches selecting a first distance from a first doped plug to a first boundary of the first doped well to provide approximately a desired breakover voltage between the first doped plug and the first doped region. Applicant respectfully disagrees, for at least the following reasons. Hsing describes a conventional transistor having a gate 13 formed above an oxide layer 12, which is formed above an epitaxial layer 11. Hsing also describes a drain region 14 formed in the surface of the epitaxial layer 11. Hsing teaches that the distance between the gate 13 and the drain region 14 directly affects both on-resistance and breakdown voltage. However, Hsing does not teach or suggest that the first distance from the first doped plug to the first boundary of the first doped well affects the breakover voltage between the first doped plug and the first doped region.

Moreover, Yang teaches away from the present invention. Yang teaches that the electrostatic discharge protection device requires an additional implant, *i.e.* a second electrostatic discharge implant 311. Yang teaches that forming the second electrostatic discharge implant 311 is necessary to adequately control a snap-back voltage. See Yang, col. 1, ll. 62-64. Yang also teaches that the second electrostatic discharge implant 311 is formed such that the breakover

voltage is determined by the distance between the first electrostatic discharge implant 309 and the second electrostatic discharge implant 311, *i.e.* Yang teaches selecting the distance "d" to determine the breakover voltage.

For at least the aforementioned reasons, Applicant respectfully submits that claims 36-37, 39-43, 45-46, and 48-52 are allowable over Yang in view of Hsing and requests that the Examiner's rejections be withdrawn.

In the Office Action, claim 54 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Yang in view of Hsing, as applied to claim 51 above, and further in view of Pilling et al. (U.S. Patent No. 5,838,624). The Examiner's rejections are respectfully traversed.

The Examiner relies on Pilling to teach an anti-fuse network that is susceptible to damage from electrostatic discharge. However, Pilling does not remedy the fundamental deficiencies in Yang and Hsing, as described above. Thus, for at least the aforementioned reasons, Applicant respectfully submits that claim 54 is not anticipated by Yang in view of Hsing and further in view of Pilling, and requests that the Examiner's rejection be withdrawn.

Claims 38, 47, and 53 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yang in view of Hsing, as applied to claims 37, 44, and 51 above, and further in view of Matsukawa (U.S. Patent No. 5,182,227). The Examiner's rejections are respectfully traversed.

The Examiner relies on Matsukawa to teach using a LOCOS oxide to isolate electrical components on a substrate. However, Matsukawa does not remedy the fundamental deficiencies in Yang and Hsing, as described above. In particular, Matsukawa does not suggest that a LOCOS structure (or an isolation trench structure) can be used as one component of an electrostatic discharge protection device. Thus, there is no suggestion in Matsukawa, Yang, or Hsing to alter Yang's transistor using a LOCOS structure of Matsukawa to yield the electrostatic discharge

protection device formed by the claimed method. Thus, for at least the aforementioned reasons, Applicant respectfully submits that claims 47 and 53 are not anticipated by Yang in view of Hsing and further in view of Matsukawa, and requests that the Examiner's rejection be withdrawn.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (713) 934-4060 to discuss the steps necessary for placing the application in condition for allowance.

Respectfully submitted,

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Danny L. Williams, Reg. No. 31,892
WILLIAMS, MORGAN & AMERSON, P.C.
10333 Richmond Avenue, Suite 1100
Houston, TX 77042
(713) 934-7000
(713) 934-7011 (facsimile)

ATTORNEY FOR APPLICANT